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Werner Berg

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EXAMINER

BARHAM, BETHANY P

ART UNIT

PAPER NUMBER

1615

MAIL DATE

DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/501,321	Applicant(s) BERG, WERNER	
	Examiner BETHANY BARHAM	Art Unit 1615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 March 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 and 8-20 is/are pending in the application.
- 4a) Of the above claim(s) 16-19 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 8-15 and 20 is/are rejected.
- 7) ☒ Claim(s) 14 and 20 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Summary

Receipt of Applicant's Response and Amended Claims filed on 03/31/08 is acknowledged. Claims 1-6 and 8-18 are pending. Claims 1-6 and 8-15 are rejected.

Due to Applicant's Amendments the 112 1st rejections over claims 5, 9 and 15 are hereby withdrawn and the 102 over '985 is also withdrawn. All other rejections of record are hereby maintained.

Election/Restriction

Newly submitted claims 16-19 directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: the newly added claims are directed to a method of controlling odors, which is a different than the originally presented product and method of making product claims.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 16-19 withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

OBJECTION

Claims 14 and 20 are objected to since they include 'silicane' which is a misspelling for silicon (Si) or silica (SiO_x). Please clarify and amend.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

Claims 1-6, 8-15 and 20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The instant claims are so broad in nature and the terms undefined, that searching the claims as written results in various types of art. Since the claims are so undefined as to leave interpretation open to many different art areas, all art found to match the instant claims will be applied.

Further, terms in the instant claims like “pH-value reducing substances”, “convertible substances”, “hydrophobising additives”, etc in the claims are not properly defined in the instant specification and it is unclear as to whether these substances are combined together in the inventive covering or are each separate covering inventions. For example hydrophobising additives are supposed to include stearates and silicane emulsions, which is indefinite. Does Applicant mean silica or silicon and what stearates or emulsions of stearates? No emulsions are defined. Please amend.

MAINTAINED REJECTIONS

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-6, 9-12, 14-15 and 20 are rejected under 35 U.S.C. 102(e) as being anticipated by US 2003/0012810 A1 ('810).

The limitations of claims 1-7, are taught:

- '810 teaches a breathable absorbent article comprising lactic acid producing micro-organisms together with silica and/or zeolite, clay, etc, which deliver high performance breathability and high protection level while delivering effective odor control, especially odors associated with bodily fluids (abstract, claims 1, 7-8, 19, and 22-24). Claims 26 of '810 teaches that the article may be a diaper, incontinent pad or human or animal waste management device or interlabial pad.
- '810 teaches the micro-organisms included in the article change the pH of the composition to an acidic environment (pH 4-4.5) (pg. 1, [0010]).

Art Unit: 1615

- '810 teaches a liquid substance such as urine, perspiration, blood, etc (pg. 1, [0006]).
- '810 teaches including acids such as carboxylic acids (such as citric, lauric, boric, adipic, etc), clays, zeolites, silicas, cyclodextrin, starches, etc (pg. 9, [0086]).

The limitations of claims 9-12, 14-15 and 20 are taught:

- '810 teaches a backsheet that is breathable and permits the transfer of water vapour and air through it, but prevent the transport of liquid (pg. 11, [0116]).
- '810 teaches including silicas, zeolites, clays, ion exchange resins, etc (claims 8 and 23).
- '810 teaches bonding the lactic acid producing microorganisms to the cellulose tissue layers with a hot melt adhesive (pg. 10, [0108]).

Claims 1-6, 8-12, and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by US 6,008,028 ('028).

The limitations of claims 1-5, 9-12 and 14 are taught:

- '028 teaches compositions and methods of use of constructed microbial mats for bioremediation comprising cyanobacteria and purple autotrophic bacteria and an organic nutrient source such as silage and clay in a laminated structure (abstract, claim 1). The mats are used to convert hazardous materials into small molecules such as carbon dioxide and water and for treating polluted or contaminated sites (col. 1, lines 15-25) and to cover soil, water, industrial effluents, waste water treatment (col. 13, line 62-col. 16, line 12).

Art Unit: 1615

- The mat also contains inert materials such as organic materials such as a mesh made from coconut hulls, ground corn cobs, limestone, clays, etc (col. 8, lines 38-50, claims 1-6).
- Example 1 teaches that the organic nutrient substrate is ensiled grass clippings which contain lactic acid (or can alternatively have acetic acid) that has a microbial mixture added to it, such as Oscillatoria and purple autotrophic bacteria.
- '028 teaches that a support structure (coconut hulls, ground corn cobs, limestone, etc) can be annealed to the microbial mat and that benonite is the preferred clay (hydrophobising agent as taught in the instant specification) (claims 1-3 and 6).

The limitations of claims 6 and 8 are taught:

- '028 teaches that the cyanobacteria supply carbohydrates and proteins (col. 12, lines 42-44).
- '028 teaches that treated leachate contains nutrients such as polysaccharides, proteins and microbes (col. 18, lines 62-67).

NEW REJECTIONS

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 1615

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-6, and 8-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,008,028 ('028) and US 2003/0015473 ('473).

The limitations of claims 1-6 and 8 are taught:

- '028 is taught above and teaches compositions and methods of making and use of constructed microbial mats for bioremediation comprising bacteria and an organic nutrient source in a laminated structure (abstract, claims 1 and 7). The mats are used to convert hazardous materials into small molecules such as carbon dioxide and water and for treating polluted or contaminated sites (col. 1, lines 15-25) and to cover soil, water, industrial effluents, waste water treatment (col. 13, line 62-col. 16, line 12).
- The mat also contains inert materials such as organic materials such as a mesh made from coconut hulls, ground corn cobs, limestone, clays, etc (col. 8, lines 38-50, claims 1-6). Clays such as bentonite are taught (claims 5 and 12).
- '028 does not teach heating the clay material.
- '473 teaches the treatment of contaminated liquids using organoclays, clays or zeolites, bentonites, etc (abstract, [0049, 0060]). '473 teaches that the clays are heat treated to remove any solvents or residual moisture at a temperature of 20-250 degrees C [0069-0070] prior to be used in treatment of contaminants.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine '028 and '473. As skilled artisan treating waste as taught by both

Art Unit: 1615

'028 and '473 would know how to heat clays to remove any solvents or residual moisture as taught by '473 and would be motivated to look to '473 since '028 teaches clay is an important part of the microbial mat. '028 teaches the composition as instant claimed and the method for producing, but does not specify the temperature that the clays can be treated at, while '473 explicitly teaches that clays including zeolite and bentonite for use in contaminant cleanup are treated at temperatures overlapping with the instant claims ranges and thus one of ordinary skill in the art would have a reasonable expectation of success. Taking a known method of heat treating clay as taught by '473 for the purpose of treating contaminants and combining it with the covering material for waste taught by '028 containing clay is obvious over the instant claims and within the purview of one of ordinary skill in the art.

Claims 1-6, and 8-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,008,028 ('028) in view of US 4,214,985 ('985).

- '028 and '473 are taught above and teach a covering for treating waste containing clay, lactic acid, silage and bacteria. (Note: Wikipedia teaches "Silage undergoes anaerobic fermentation, which starts about 48 hours after the silo is filled. Traditionally, the fermentation is caused by indigenous microorganisms, but today, some silage is inoculated with specific microorganisms to speed fermentation or improve the resulting silage. The process converts sugars to acids and exhausts any oxygen present in the crop material. The fermentation is essentially complete after about two weeks. Silage inoculants contain one or

more strains of lactic acid bacteria, and the most common is *Lactobacillus plantarum*.” As such Silage inherently contains *Lactobacillus plantarum* which is a lactic acid producing bacteria.).

- ‘028 and ‘473 do not teach including a bacteria that digests molasses, but does teach including silage and grass containing lactic acid.
- ‘985 teaches the treatment of sewage with bacteria *L. plantarum* and a carbohydrate so that the pH drops to below 4 (abstract, claim 1). ‘985 teaches that the *L. plantarum* is capable of fermenting all common sugars and is able to digest molasses in order to produce lactic acid (col. 2, lines 43-52).
- ‘985 teaches that the carbohydrates include glucose, sucrose, etc (claims 18-20 and 23). ‘985 teaches that the lactic acid produced by *L. plantarum* is neutralized with ammonia to form ammonium lactate (claim 21, col. 2, lines 32-39). ‘985 teaches that the lactic acid produced inhibits growth and causes death of the vast majority of bacteria found in sludge (col. 12, line 65-col. 13, line 3).
- ‘985 teaches admixing the bacteria with carbohydrate (col. 2, lines 6-10).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine ‘028 and ‘473 in view of ‘985. The skilled artisan would be motivated to look to what is known in the art about treating waste and ‘985 specifically teaches that *L. plantarum* ferments common sugars and molasses to produce lactic acid for treating waste, while ‘028 teaches the generic composition including silage and grass containing lactic acid (which according to the art is known to contain *L. plantarum*) for treating waste including bacteria and clay. ‘473 teaches that the clays used in ‘028

are heat treated in order to obtain better results in treating contaminated liquids and as such would be beneficial to heat treat the clays of '028 for the same purpose. Taking a known method of heat treating clay as taught by '473 for the purpose of treating contaminants and combining it with the covering material for waste taught by '028 containing clay and silage (which contains *L. plantarum* and is taught by '985 to ferment sugars and molasses into lactic acid) is obvious over the instant claims and within the purview of one of ordinary skill in the art.

Response to Arguments

Applicant's arguments with respect to claims 1-6, 8-15 and 20 have been considered but are not persuasive and are moot in view of the new rejections necessitated by Applicant's amendments. Applicant argues that '810 does not teach a hydrophobising additive; the Examiner respectfully disagrees. '810 teaches inert carrier materials such as such as clays, silicas, etc and the instant specification teaches that certain materials are already hydrophobised granulates, bentonites or clay (pg. 6, last paragraph). It is the Examiner's opinion that silicates meet the limitation 'hydrophobised granulates' or minerals and that clay is hydrophobic as taught by the instant spec. Furthermore, the definition from Wikipedia: "Clay, being relatively impermeable to water, is also used where natural seals are needed, such as in the cores of dams, or as a barrier in landfills against toxic seepage ('lining' the landfill, preferably in combination with geotextiles)." (see cited as interest). So clay is simultaneously an inert carrier and hydrophobic. '810 also teaches that the top layer of the product is fibrous and

Art Unit: 1615

hydrophobic [0153]. The products and layers of '810 do not dissolve when wetted and therefore have hydrophobic characteristics.

Applicant further argues that '028 does not teach "a covering material which consists of inert materials and additives...instead requires a mat structure". The Examiner respectfully disagrees. '028 teaches that the mat is made up from inert materials such as silage and grass, clays such as bentonite, etc and that the grass can contain lactic acid and that the bacteria supplies carbohydrates and proteins. Applicant's own specification teaches that inert materials include straw, bentonites, clay, etc (page 3, 2nd paragraph) and the instant specification teaches that certain materials are already hydrophobised granulates, bentonites or clay (pg. 6, last paragraph). Thus '028 teaches a 'covering' or mat that consists of inert materials and hydrophobising agents such as clays, bentonites, etc, and lactic acid and that the bacteria supply carbohydrates and proteins. The formation of the material of '028 into a mat is not a teaching away from the instant claims, where the structure and composition is the same the instant claims are anticipated by the prior art. Also, Wikipedia teaches "Silage undergoes anaerobic fermentation, which starts about 48 hours after the silo is filled. Traditionally, the fermentation is caused by indigenous microorganisms, but today, some silage is inoculated with specific microorganisms to speed fermentation or improve the resulting silage. The process converts sugars to acids and exhausts any oxygen present in the crop material. The fermentation is essentially complete after about two weeks. Silage inoculants contain one or more strains of lactic acid bacteria,

and the most common is *Lactobacillus plantarum*.” As such Silage inherently contains *Lactobacillus plantarum* which is a lactic acid producing bacteria.

CITED AS INTEREST

Wikipedia: search term “Clay”- “Clay, being relatively impermeable to water, is also used where natural seals are needed, such as in the cores of dams, or as a barrier in landfills against toxic seepage ('lining' the landfill, preferably in combination with geotextiles).” From page 3 of pages 1-4.

Wikipedia: search term “Silage”- “Silage undergoes anaerobic fermentation, which starts about 48 hours after the silo is filled. Traditionally, the fermentation is caused by indigenous microorganisms, but today, some silage is inoculated with specific microorganisms to speed fermentation or improve the resulting silage. The process converts sugars to acids and exhausts any oxygen present in the crop material. The fermentation is essentially complete after about two weeks. Silage inoculants contain one or more strains of lactic acid bacteria, and the most common is *Lactobacillus plantarum*.”

Conclusions

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bethany Barham whose telephone number is (571)272-6175. The examiner can normally be reached on M-F, 8:30 am to 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Woodward can be reached on 571-272-8373. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1615

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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